

WHAT WE CLAIM IS:

1. A composition comprising (i) an enzyme that cleaves a linkage that effects release of a cell-surface protein or carbohydrate, said enzyme being other than an endo-1,4-D-mannanase, and (ii) a physiologically acceptable carrier for said enzyme, wherein said composition is in a form suitable for oral administration.
2. The composition according to claim 1, wherein said enzyme cleaves a linkage that effects the release of a cell-surface protein.
3. The composition according to claim 1, wherein said composition contains no anti-infection agent other than said enzyme.
4. The composition according to claim 1, wherein said composition is a feed.
5. The composition according to claim 4, wherein said feed composition contains no anti-infection agent other than said enzyme.
6. The composition according to claim 1, wherein said enzyme is selected from the group consisting of sphingomyelinases and phospholipases.
7. The composition according to claim 6, wherein said enzyme is a type C or a type D phospholipase.
8. The composition according to claim 7, wherein said enzyme is phosphatidylinositol-specific phospholipase C.
9. The composition according to claim 1, wherein said enzyme is selected from the group consisting of esterases, cerebrosidases, and carbohydrases that cleave a linkage that effects release of a cell-surface protein or carbohydrate.
10. The composition according to claims 1, wherein said carrier is a foodstuff into which said enzyme is incorporated.

11. The composition according to claim 10, wherein said foodstuff is an animal feed comprised of grain material, a source of protein, vitamins, amino acids, and minerals.

12. The composition according to claim 11, wherein said grain material is corn, sorghum, wheat, barley, or oats.

13. The composition according to Claim 11, wherein the source of protein is beans or peas.

14. The composition according to claims 1, wherein said composition is in a solid or a liquid formulation.

15. The composition according to claims 1, wherein said enzyme is contained in a gelatin capsule shell.

16. The composition according to claim 1, wherein said enzyme is prepared from a *Bacillus cereus* strain.

17. The composition according to claim 16, wherein said *Bacillus cereus* strain is ATCC 7004 or ATCC 6464.

18. The composition according to claim 1, wherein said enzyme is obtained by expression of a recombinant DNA in a host organism.

19. The composition according to claim 18, wherein said host organism is from a *Bacillus megaterium* strain.

20. The composition according to claim 1, wherein said enzyme is present at 200 IU/Kg –4000 IU/Kg feed.

21. A method of treating or ameliorating the risk of a digestive tract infection, comprising orally administering, to a subject suffering from or at risk for suffering said infection, an effective amount of enzyme that cleaves a linkage that effects release of a cell-

surface protein or carbohydrate, wherein said enzyme is other than an endo-1,4--D-mannanase.

22. The method according to claim 21, wherein said enzyme cleaves a linkage that effects release of a cell-surface protein.

23. The method according to claim 21, wherein said method does not include administering an anti-infection agent other than said enzyme.

24. The method according to claim 21, wherein said infection is caused by a protozoan, bacterial, yeast, or fungal pathogen.

25. The method according to claim 24, wherein said infection is caused by a protozoan pathogen of the genus *Eimeria*.

26. The method according to claim 24, wherein said infection is caused by a protozoan pathogen of the genus *Cryptosporidium*

27. The method according to claim 24, wherein said infection is caused by a bacterial pathogen of the genus *Clostridium*.

28. The method according to claim 21, comprising administering orally, to said subject, an extracellular enzyme preparation from a *Bacillus cereus* strain.

29. The method according to claim 28, wherein said *Bacillus cereus* strain is ATCC 7004 or ATCC 6464.

30. The method according to claim 21, wherein said enzyme is obtained by expression of a recombinant DNA in a host organism.

31. The method according to claim 29, wherein said host organism is from a *Bacillus megaterium* strain.

32. A composition comprising (i) an enzyme that cleaves a linkage that effects release of a cell-surface protein or carbohydrate and (ii) a physiologically acceptable carrier

for said enzyme, wherein said composition is in a form suitable for oral administration and does not contain an anti-infection agent other than said enzyme.

33. A method of treating or ameliorating the risk of a digestive tract infection, comprising orally administering, to a subject suffering from or at risk for suffering said infection, an effective amount of enzyme that cleaves a linkage that effects release of a cell-surface protein or carbohydrate, wherein said method does not include administering, with said enzyme, an antimicrobially effective amount of another anti-infection agent.

09/31/97 12:00:00